



MARKSCHEME

SPECIMEN PAPER

INFORMATION TECHNOLOGY IN A GLOBAL SOCIETY

Higher Level

Paper 3

Examiners should be aware that in some cases, candidates may take a different approach, which if appropriate should be rewarded. If in doubt, check with your Team Leader.

In the case of an “identify” question read all answers and mark positively up to the maximum marks. Disregard incorrect answers. In all other cases where a question asks for a certain number of facts e.g. “describe two kinds”, mark the **first two** correct answers. This could include two descriptions, one description and one identification, or two identifications.

1. Define the following terms:

(a) *hotspot*

[2 marks]

Answers may include:

- a place that offers internet access
- (a place that provides public) wireless LAN/WiFi
- accessible by laptop/WiFi phone/PDA *etc.*
- short range of access.

Award [1 mark] for each point up to a maximum of [2 marks].

(b) *https.*

[2 marks]

Answers may include:

- Hypertext Transfer Protocol (Secure)
- used to encrypt and decrypt data
- ... passing between the user and the server
- operates at transport layer
- suitable application for sending sensitive information, such as bank details.

Award [1 mark] for each point up to a maximum of [2 marks].

2. “Hector is considering creating a home network” (lines 35–36). Explain the purposes of the following in the home network:

(a) **SSID**

[2 marks]

Answers may include:

- Service Set Identifier
- name used to identify a wireless LAN
- 32 character unique identifier
- used to select correct network
- there may be others in range
- allows use of virtual access points from same physical access point.

Award [1 mark] for each point up to a maximum of [2 marks].

(b) **router**

[2 marks]

Answers may include:

- used to connect different networks together
- receives data packets from a wide area network
- can connect to an Internet Service Provider
- device that forwards data packets along a network
- selects optimum route (for data packets).

Award [1 mark] for each point up to a maximum of [2 marks].

(c) **switch.**

[2 marks]

Answers may include:

- network device that is used to connect segments of a LAN
- useful when connecting within various parts of a building
- network segments are isolated from each other
- sometimes called a bridge
- filters and forwards data packets to another segment of a network
- reduces the incidence of data collisions.

Award [1 mark] for each point up to a maximum of [2 marks].

3. Discuss *two* methods that Hector can use to ensure the security of the wireless network he intends to use in his home. [8 marks]

*The question asks for **two** methods. Please annotate the script with M1 and M2, etc. to indicate the start of each method. Do not credit further methods if given. Do not treat brief erroneous comments as a “method”.*

Answers may include the following methods:

- use of firewall
- use of anti-virus/anti-spyware/other malware protection
- secure your wireless router or access point
- set up admin rights
- set up admin password/settings
- don't use default password
- don't use default settings for the device connected to the network
- don't broadcast SSID
- change the default SSID – this should prevent sniffers
- enable WPA or WEP encryption
- WPA is more secure than WEP
- use long keys
- change keys often
- use MAC filtering for controlling access to your WLAN
- only designated computers can access the network
- reduce your WLAN transmitter power
- disable remote administration.

In this question it is expected there will be a balance in the ITGS terminology between IT technical terminology and the terminology related to social and ethical impacts.

SL and HL paper 1 part (c) and HL paper 3 question 3 markband

Marks	Level descriptor
No marks	<ul style="list-style-type: none"> • <i>A response with no knowledge or understanding of the relevant ITGS issues and concepts.</i> • <i>A response that includes no appropriate ITGS terminology.</i>
Basic 1–2 marks	<ul style="list-style-type: none"> • <i>A response with minimal knowledge and understanding of the relevant ITGS issues and concepts.</i> • <i>A response that includes minimal use of appropriate ITGS terminology.</i> • <i>A response that has no evidence of judgments and/or conclusions.</i> • <i>No reference is made to the scenario in the stimulus material in the response.</i> • <i>The response may be no more than a list.</i>
Adequate 3–4 marks	<ul style="list-style-type: none"> • <i>A descriptive response with limited knowledge and/or understanding of the relevant ITGS issues and/or concepts.</i> • <i>A response that includes limited use of appropriate ITGS terminology.</i> • <i>A response that has evidence of conclusions and/or judgments that are no more than unsubstantiated statements. The analysis underpinning them may also be partial or unbalanced.</i> • <i>Implicit references are made to the scenario in the stimulus material in the response.</i>
Competent 5–6 marks	<ul style="list-style-type: none"> • <i>A response with knowledge and understanding of the relevant ITGS issues and/or concepts.</i> • <i>A response that uses ITGS terminology appropriately in places.</i> • <i>A response that includes conclusions and/or judgments that have limited support and are underpinned by a balanced analysis.</i> • <i>Explicit references to the scenario in the stimulus material are made at places in the response.</i>
Proficient 7–8 marks	<ul style="list-style-type: none"> • <i>A response with a detailed knowledge and understanding of the relevant ITGS issues and/or concepts.</i> • <i>A response that uses ITGS terminology appropriately throughout.</i> • <i>A response that includes conclusions and/or judgments that are well supported and underpinned by a balanced analysis.</i> • <i>Explicit references are made appropriately to the scenario in the stimulus material throughout the response.</i>

4. Betty “has been provided with a laptop computer by her local office. Unfortunately, Hector has found that her laptop has different specifications and uses different versions of software. Hector and Betty are both concerned as this will potentially cause problems in sharing and editing documents.” (*lines 46–49*)

Evaluate *two* possible strategies that *N&Q Investments* could adopt in order to reduce the problems with sharing and editing documents. *[12 marks]*

The question asks for two strategies. Please annotate the script with S1 and S2, etc. to indicate the start of each strategy. Do not credit further strategies if given. Do not treat brief erroneous comments as a “strategy”.

Answers may include the following strategies:

- centralized control over purchasing
- policy on hardware purchase
- policy on software purchase
- policy on operating systems
- version control of software throughout company
- examples of software incompatibilities
- standardize file formats used
- check for backward compatibility issues
- insist on simple/standard document layouts
- provide templates
- provide macros
- use of PDF files
- web-based applications / cloud computing
- references to companies/organizations that they have researched.

If the candidate only offers one strategy, then award a maximum of [8 marks].

HL paper 3 question 4 markband

Marks	Level descriptor
No marks	<ul style="list-style-type: none"> <i>A response with no knowledge or understanding of the relevant ITGS issues and concepts.</i> <i>A response that includes no appropriate ITGS terminology.</i>
Basic 1–3 marks	<ul style="list-style-type: none"> <i>A response with minimal knowledge and understanding of the relevant ITGS issues and concepts.</i> <i>A response that includes minimal use of appropriate ITGS terminology.</i> <i>A response that has no evidence of judgments, conclusions or future strategies.</i> <i>No reference is made to the information in the case study or independent research in the response.</i> <i>The response may be no more than a list.</i>
Adequate 4–6 marks	<ul style="list-style-type: none"> <i>A descriptive response with limited knowledge and/or understanding of the relevant ITGS issues and/or concepts.</i> <i>A response that includes limited use of appropriate ITGS terminology.</i> <i>A response that has evidence of conclusions, judgments or future strategies that are no more than unsubstantiated statements. The analysis underpinning them may also be partial or unbalanced.</i> <i>Implicit references are made to the information in the case study or independent research in the response.</i>
Competent 7–9 marks	<ul style="list-style-type: none"> <i>A response with knowledge and understanding of the relevant ITGS issues and/or concepts.</i> <i>A response that uses ITGS terminology appropriately in places.</i> <i>A response that includes conclusions and/or judgments that have limited support and are underpinned by a balanced analysis.</i> <i>Explicit references to the information in the case study or independent research are made at places in the response.</i>
Proficient 10–12 marks	<ul style="list-style-type: none"> <i>A response with a detailed knowledge and understanding of the relevant ITGS issues and/or concepts.</i> <i>A response that uses ITGS terminology appropriately throughout.</i> <i>A response that includes conclusions, judgments or future strategies that are well supported and underpinned by a balanced analysis.</i> <i>Explicit references are made appropriately to the information in the case study and independent research throughout the response.</i>